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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/718,451

11/19/2003

Ming Lai

9851

Lai, Ming  
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Rochester, NY 14609

7590

10/10/2007

EXAMINER

THOMAS, BRANDI N

ART UNIT

PAPER NUMBER

2873

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/718,451	Applicant(s) LAI ET AL.	
	Examiner Brandi N. Thomas	Art Unit 2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 14-25 is/are pending in the application.
- 4a) Of the above claim(s) 8 and 14-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 23-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f):
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/19/03</u> . | 6) <input checked="" type="checkbox"/> Other: <u>Detailed Action</u> .                  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of claims 1-7 and 23-25 in the reply filed on 8/14/07 is acknowledged.

### ***Information Disclosure Statement***

2. Acknowledgement is made of receipt of Information Disclosure Statement(s) (PTO-1449) filed 11/19/03. An initialed copy is attached to this Office Action.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-7 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ross et al. (6688745 B2) in view of Kudryashov et al. (6736507 B2).

Regarding claims 1 and 7, Ross et al. discloses, in figure 2, an ophthalmic adaptive-optics instrument for obtaining patient- verified prescription of low and high-order aberrations, comprising: an observation target disposed for a subject eye (106) to fixate upon (col. 3, lines 7-9); an aberration-compensating element (140) disposed in the observation path of said subject eye (106), wherein said aberration-compensating element (140) is driven by a control signal and is capable of compensating low and high-order aberrations of said subject eye (106) (col. 4, lines 16-22); a wavefront-sensing device (130) sensing the aberration of said subject eye (106) via said

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aberration-compensating element (140) (col. 3, lines 25-27); processing electronics (132) coupled to said wavefront-sensing device (130) and accepting a command signal to generate said control signal to drive said aberration-compensating element (140) (col. 3, lines 11-13 and 35-37); and subjective feedback control means (136) enabling the patient to actively produce said command signal to adjust said aberration-compensating element (140) and to verify the amount of aberration compensation for optimal visual acuity (col. 3, lines 15-18 and 37-42 and col. 4, lines 16-22); wherein said ophthalmic adaptive-optics instrument can measure the total aberration of said subject eye (106) (col. 3, lines 24-25) but does not specifically disclose corresponding to a null command signal and the residual aberration for optimal visual acuity, corresponding to a command signal for optimal visual acuity; and wherein said ophthalmic adaptive-optics instrument provides, by subtracting said residual aberration from said total aberration, said patient-verified prescription of low-and-high order aberrations. Kudryashov et al. discloses corresponding to a null command signal and the residual aberration for optimal visual acuity, corresponding to a command signal for optimal visual acuity; and wherein said ophthalmic adaptive-optics instrument provides, by subtracting said residual aberration from said total aberration, said patient-verified prescription of low-and-high order aberrations (col. 3, lines 11-4 and 29-37). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the device of Ross et al. with the aberrations of Kudryashov et al. for the purpose of correcting large low order aberrations and small high order aberrations in the wavefront (col. 3, lines 11-14 and 29-37).

Regarding claim 2, Ross et al. discloses, in figure 2, an ophthalmic adaptive-optics instrument for obtaining patient- verified prescription of low and high-order aberrations, wherein said aberration-compensating element (140) is a deformable mirror (col. 4, lines 26-28).

Regarding claim 3, Ross et al. discloses, in figure 2, an ophthalmic adaptive-optics instrument for obtaining patient- verified prescription of low and high-order aberrations, wherein said aberration-compensating element (140) consists of a deformable mirror and a set of compensation lenses (col. 4, lines 26-28).

Regarding claim 4, Ross et al. discloses, in figure 2, an ophthalmic adaptive-optics instrument for obtaining patient- verified prescription of low and high-order aberrations, wherein said aberration-compensating element (140) is a spatial phase modulator (col. 4, lines 26-28).

Regarding claims 5 and 6, Ross et al. discloses the claimed invention but does not specifically disclose wherein said wavefront-sensing device is a Hartmann-Shack wavefront sensor. Kudryashov et al. disclose wherein said wavefront-sensing device is a Hartmann-Shack wavefront sensor (col. 3, lines 14-15). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the device of Ross et al. with the Hartmann-Shack wavefront sensor of Kudryashov et al. for the purpose of its precision and accuracy (col. 3, lines 14-15).

Regarding claim 23, Ross et al. discloses, in figure 2, an ophthalmic adaptive-optics instrument for obtaining patient- verified prescription of low and high-order aberrations, further comprising: relay optics (138) relaying wavefront at pupil of said subject eye (106) to said aberration-compensating element (col. 4, lines 16-21).

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Regarding claim 24, Ross et al. discloses, in figure 2, an ophthalmic adaptive-optics instrument for obtaining patient- verified prescription of low and high-order aberrations, further comprising: relay optics (138) comprises two or more lenses (col. 4, lines 16-21).

Regarding claim 25, Ross et al. discloses, in figure 2, an ophthalmic adaptive-optics instrument for obtaining patient- verified prescription of low and high-order aberrations, wherein said relay optics (138) includes a set of compensation lenses to compensate low order aberrations of said subject eye (106) (col. 4, lines 16-21).

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brandi N. Thomas whose telephone number is 571-272-2341. The examiner can normally be reached on Monday - Thursday from 6-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Mack can be reached on 571-272-2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Brandi N Thomas  
Examiner  
Art Unit 2873



BNT  
September 28, 2007



RICKY MACK  
SUPERVISORY PATENT EXAMINER